

CLAIMS

What is claimed is:

1        1. A method of forming an interconnection, comprising  
2        introducing a barrier material in a via of a dielectric to  
3        a circuit device on a substrate in such a manner to deposit the  
4        barrier material on the circuit device;

5                introducing a seed material into said via in a manner that  
6        leaves the barrier material overlying the circuit device  
7        substantially exposed;

8                substantially removing the barrier material overlying the  
9        circuit device; and

10          introducing a conductive material in the via to form the  
11        interconnection.

51        2. The method of claim 1, wherein the step of introducing  
2        a seed material comprises sputter depositing the seed material  
3        into the via.

1        3. The method of claim 1, wherein the barrier material  
2        comprises etch characteristics such that the barrier material  
3        may be selectively etched in the presence of the seed material.

1        4. The method of claim 1, wherein the circuit device is  
2        an interconnection line.

1       5. The method of claim 1, wherein the step of introducing  
2 the conductive material comprises electroplating.

1       6. A method of forming an interconnection on a substrate,  
2 comprising:

3       providing a substrate having a circuit device, a dielectric  
4 material overlying the circuit device having a via through the  
5 dielectric to the circuit device;

6       depositing a barrier material in the via to substantially  
7 cover the side walls of the via and the circuit device;

8       introducing a seed material into said via in a manner that  
9 leaves the barrier material overlying the circuit device  
10 substantially exposed;

11       substantially removing the barrier material overlying the  
12 circuit device; and

13       introducing a conductive material in the via to form the  
14 interconnection.

1       7. The method of claim 6, wherein the step of introducing  
2 a seed material comprises sputter depositing the seed material.

1       8. The method of claim 7, wherein the step of introducing  
2 a seed material comprises introducing the seed material over a  
3 portion of a top surface of the dielectric material and an  
4 amount of seed material over the barrier material overlying the

5 circuit device is about five percent or less of the amount  
6 overlying the top surface of the dielectric.

1 9. The method of claim 6, wherein the barrier material  
2 comprises etch characteristics such that the barrier material  
3 may be selectively etched in the presence of the seed material.

1 10. The method of claim 6, wherein the circuit device is  
2 an interconnection line.

1 11. The method of claim 6, wherein the step of introducing  
2 a conductive material comprises electroplating.

1 12. An integrated circuit comprising:  
2 a substrate having a circuit device;  
3 a dielectric material overlying the circuit device with a  
4 via formed in the dielectric material to the circuit device;  
5 a barrier material substantially lining <sup>at least one wall</sup> ~~a wall or walls~~ of  
6 the via;  
7 a seed layer overlying the barrier material and substantial  
8 lining the ~~wall or walls~~ of the via; and  
9 a conductive material directly contacting the circuit  
10 device.

1 13. The integrated circuit of claim 10, wherein the  
2 circuit device is an interconnection line

*B' which*  
1        14. The integrated circuit of claim 10, wherein the  
2 conductive material is copper.

*add 1*  
*B' 2*